Bogue Banks Estuarine Shoreline

The northern shoreline of Bogue Banks along Bogue Sound consists of stabilized and natural shoreline segments. The soundside shoreline consists of approximately 38 miles of brackish marsh, sandy beach, artificially stabilized shoreline types (e.g., riprap, bulkheads, groins), and mixed shorelines of intermixed marsh and stabilized areas. The shoreline was categorized into these four categories remotely using 1998 color aerial photography and ground-truthed in the field (in May 2002).

Fringing marsh areas range from less than 5 feet to over 100 feet wide and may be adjacent to landscaped yards, maritime forest or hard stabilization (Figure 11). This type of shoreline is the most abundant along the Bogue Banks soundside shoreline, covering 50.9 ± 0.8% of the shoreline from Fort Macon to The Pointe.

Figure 11. An example of shoreline categorized as fringing *Spartina* spp. marsh from central Emerald Isle on Bogue Sound. This particular reach is bordered by forested areas. Photo taken May 2002 by USFWS.

Figure 12. This segment of shoreline along Bogue Sound in western Emerald Isle is categorized as a sandy beach shoreline. Bogue Inlet and the Atlantic Ocean are towards the top of the photograph and Bogue Sound at the bottom. Photo taken May 2002 by USFWS.

Sandy beaches are minimal along the Bogue Sound shoreline on Bogue Banks (7.2 ± 0.8%), especially when compared to Shackleford Banks to the east which is dominated by sand beaches along its estuarine shoreline. The sand beaches on Bogue Banks are virtually all at either end of the island near the inlets (Figure 12).

The remaining portion of the estuarine shoreline consists of artificially stabilized and mixed shorelines. Artificially stabilized areas range widely in type and are constructed and maintained by private property owners (Figure 13). Areas were classified as mixed if the proportion of properties stabilized alternated with natural marsh shorelines were roughly equal. Approximately equal portions of the 38 miles of estuarine shoreline were classified as artificially stabilized (21.6 ± 0.8%) and mixed (20.3 ± 0.8%).

Figure 13. Shoreline segments with both stabilized and natural estuarine shorelines were categorized as mixed. The developed shoreline to the left in the photograph was classified as mixed with some reaches stabilized and others not. The natural shoreline on the right was categorized as a marsh shoreline type. Photo taken in western Emerald Isle in May 2002 by USFWS.

The North Carolina Division of Marine Fisheries has designated one area along the estuarine shoreline of Bogue Banks as fishery nursery areas (Figure 14). Archer Creek is located in Emerald Isle and is oriented in an east-west direction, draining to the east. Thus the nursery area is sheltered from winds out of the west, north and south. The nursery area covers 18 acres that are classified as intertidal emergent wetlands by the National Wetlands Inventory (NWI) program and salt/brackish marsh by the North Carolina Division of Coastal Management (NC DCM).

The North Carolina Coastal Federation (NCCF) has purchased ~32 acres at Hoop Pole Creek for conservation and restoration of natural ecosystems in this area. The preserve is located at Mile Marker 3 and is adjacent to shopping centers on its western and southern boundaries. The group has undertaken restoration of oyster beds along this stretch of shoreline and regularly conducts environmental education programs on an interpretive trail through the tract.

Figure 14. The Archer Creek fishery nursery area in Emerald Isle, highlighted in magenta. The Atlantic Ocean is at the bottom of the image and Bogue Sound at the top. The nursery area encompasses ~18 acres of brackish marsh wetland habitat. The green lines parallel to the estuarine shoreline indicate marsh shoreline types and blue lines indicate mixed shoreline types. Orange-red areas are maritime forest, white areas bare sand or impervious surfaces, and black areas open water. Image is from 1998 U.S. Geological Survey Mr. SID color infrared data for the Swansboro quadrangle.